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Not Having What You Want versus Having What You Do Not Want: The Impact of Type of Negative Outcome on the Experience of Disappointment and Related Emotions

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The present research focuses on the emotional consequences of negative outcomes. Two types of negative outcomes are distinguished: The absence of a positive outcome and the presence of a negative outcome. It is argued that disappointment, because of its close link with hope, desire, and promise, is more associated with the absence of a positive outcome than with the presence of a negative outcome. Disappointment is also expected to be more associated with the absence of a positive outcome than related negative emotions, such as sadness, anger, frustration, and regret. The results of four studies, using different methodologies, confirm these predictions. In Study 1 and Study 2 participants recalled an autobiographical emotional episode, and appraisals concerning two different types of negative outcomes were assessed. In Study 3 a scenario methodology was used in which the type of negative outcome was experimentally manipulated and ratings for different emotions were assessed. Finally, in Study 4 on-line emotional reactions to the two different types of negative outcomes were assessed in an experiment in which real money could be won or lost. Implications for the study of disappointment are briefly discussed.

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INTRODUCTION

No childhood passes without disappointment about a birthday present, no adolescence seems to be complete without a disappointing love affair, and hardly anyone is a stranger to the unpleasant feeling that stems from buying an expensive consumer product that turns out to be less than expected. All in all, a life without disappointment seems rare. This introspective view is supported by more systematic research showing that disappointment is one of the most frequently experienced emotions following failure (Weiner, Russell, & Lerman, 1979).

Disappointment has received some attention from researchers in the field of behavioural decision making (Bell, 1985; Loomes & Sugden, 1986). They assume that people anticipate disappointment and take this into account when making decisions. For instance, Shepperd, Ouellette, and Fernandez (1996) showed that individuals tend to abandon their optimism and may even become pessimistic in anticipation of self-relevant feedback. They argue that people anticipate the disappointment they would feel if their performance were to fall short of their expectations. Thus, people reduce their performance estimates to minimise the possibility of performing worse than expected and to avoid disappointment arising as a consequence.

Our own research showed that the probability of an outcome and the effort invested in attaining an outcome have an impact on the intensity of disappointment. The more probable a positive outcome was, the more intense disappointment a person feels if the outcome is not attained (van Dijk & van der Pligt, 1997). Disappointment is also more intense after having invested more effort in vain to attain the desired outcome (van Dijk, van der Pligt, & Zeelenberg, 1998a). The way in which disappointment is experienced has also been subject to empirical investigation. Zeelenberg, van Dijk, Manstead, and van der Pligt (1998a) showed that the experience of disappointment (as compared to regret) involves feeling powerlessness, a tendency to do nothing and to get away from the situation, and wanting to do nothing. A question that was not addressed in our earlier research concerns the causes of disappointment. In the present article we aim to shed some more light on this issue. We also investigate whether disappointment, on the basis of these causes, can be distinguished from related negative emotions such as sadness, anger, frustration, and regret.

Disappointment and Desire, Hope and Promise. The various definitions of disappointment seem to share one central feature, that is, the nonfulfilment of an expectation. Disappointment has been defined as "nonachievement of an expected outcome" (Frijda, 1986, p. 280), or as "a psychological reaction to an outcome that does not match up to

expectations" (Bell, 1985, p. 1). Several authors explicitly link disappointment to the nonfulfillment of a *positive* expectation. Shand (1914) defines disappointment as an emotion that is closely linked to *desire*. Ortony, Clore, and Collins (1988, p. 110) also stress the importance of both desire and nonfulfilment of an expected outcome in their definition of disappointment: "to be displeased about the disconfirmation of the prospect of a desirable event". They state that the intensity of disappointment is affected by *hope*; that is, high hopes give rise to more intense disappointment if these hopes are dashed. Mowrer (1960, p. 169) also relates disappointment to hope: "When a hope signal appears and then disappears the reaction is one of disappointment". Frijda (1986, p. 287) links disappointment with *promise*: "Promises generally turn into disappointments when not fulfilled". Finally, Ortony et al. (1988, p. 110) make an explicit distinction between being "displeased about the disconfirmation of the prospect of a desirable event" and being "displeased about the confirmation of the prospect of a undesirable event". They labelled the former emotional reaction "disappointment", the latter as "fears-confirmed".

These definitions suggest that disappointment is primarily experienced in a situation in which something positive was expected but did not occur. It seems to be closely linked with hope, desire, and promise.

Not Having What You Want vs. Having What You Do Not Want. Several authors (Frijda, 1986; Higgins, 1989; Mowrer, 1960; Roseman, 1984; Roseman, Antoniou, & Jose, 1996; Roseman, Spindel, & Jose, 1990) argued that negative emotions can be the result of two different negative situations, which we refer to as *type of negative outcome*. Negative emotions can be the result of either the *absence* of a *positive* outcome ("not having what you want") or the *presence* of a *negative* outcome ("having what you do not want").

Appraisal theory (see e.g. Arnold, 1960; Frijda, 1986; Roseman, 1984; Scherer, 1984; Smith & Ellsworth, 1985) states that evaluations and interpretations of events determine which emotion is experienced. One appraisal dimension that can lead to different emotions is type of negative outcome. Frijda refers to the absence of a positive valence or the presence of a negative valence, that is, the absence of something intrinsically appetitive or the presence of something intrinsically aversive. Roseman refers to the absence of a reward or the presence of a punishment.¹ Thus, interpreting or evaluating a situation as either one type of negative outcome or the

¹ The absence of a reward and the presence of a punishment is a combination of an appraisal of motivational state (whether the dominant operative motive is appetitive or aversive; a reward wanting to attain or a punishment wanting to avoid) and an appraisal of situational state (whether the motivational state is perceived to be present or absent).

other, that is, as either the absence of a positive outcome or as the presence of a negative outcome, can lead to different negative emotions.

Because of its close link with hope, desire, and promise, we expect disappointment to be an emotion caused by a situation which is appraised as an absence of a positive outcome. Furthermore, we expect that disappointment is more associated with the absence of a positive outcome than several other related negative emotions, such as sadness, anger, frustration, and regret.

Disappointment and its Relation to Sadness, Anger, Frustration, and Regret. Disappointment is hardly ever experienced in isolation. Its experience is closely linked to other negative emotions. For instance, it has been argued that both *sadness* and *anger* can be the result of disappointment (Levine, 1996; Mowrer, 1960). Disappointment about not attaining an expectation or a goal could result in sadness or anger, depending on beliefs about whether the original expectation or goal can be reinstated. Sadness is associated with the belief that goals cannot be reinstated, whereas anger is associated with the belief that something can be done to reinstate a goal (Levine, 1996). Sadness is assumed to result from evaluating a situation as the absence of a positive outcome (Frijda, 1986; Higgins, 1989; Roseman, 1984; Roseman et al., 1990, 1996). Anger, on the other hand, is often assumed to be caused by both types of negative outcomes (Frijda, 1986; Roseman, 1984; Roseman et al., 1990, 1996).

Frustration is also related to disappointment. The term "disappointment" is defined in *Webster's Third New International Dictionary*, (1981) as follows: "failure of expectation or hope: frustration". Frustration, like anger, is assumed to be caused by both types of negative outcomes (Frijda, 1986; Roseman, 1984; Roseman et al., 1990, 1996).

The relation between disappointment and *regret* is at least twofold. First, both are related to decision making and choice (Bell, 1982, 1985; Loomes & Sugden, 1982, 1986). Second, both are considered to be counterfactual emotions arising from thoughts about "what might have been" (Inman, Dyer, & Jia, 1997; Loomes & Sugden, 1984; Ortony et al., 1988; Zeelenberg et al., 1998b). Regret is generally associated with both types of negative outcomes, that is, both the absence of a positive outcome and the presence of a negative outcome can give rise to regret (Frijda, 1986; Roseman, 1984; Roseman et al., 1990, 1996; Zeelenberg & Beattie, 1997; Zeelenberg, Beattie, van der Pligt, & de Vries, 1996).

To date, we do not know of any empirical study that has explicitly investigated the influence of type of negative outcome on the intensity of disappointment. The most relevant study is the one reported by Roseman (1991). His participants read brief stories about events that happened to various protagonists. In these stories, information relevant to five appraisals

was systematically varied, and participants rated the intensity of the emotions that they believed the protagonists felt in response to the events. Half of these stories concerned negative emotions and are of interest for our present purposes. These stories were concerned with the absence of a positive outcome or the presence of a negative outcome. Although disappointment was not the focus of Roseman's study (it dealt with sorrow,² anger, frustration, regret, and several other emotions), intensity ratings of disappointment were obtained. Roseman found that both the absence of a positive outcome and the presence of a negative outcome resulted in increased ratings for all negative emotions. Furthermore, he concluded that the differences in negative emotions due to the type of negative outcome were comparatively small. In Table 1 we summarise the means for sorrow, anger, frustration, and regret as reported by Roseman (1991), and also give the mean disappointment ratings.³

Table 1 shows that the differences between the two different types of negative outcomes are indeed comparatively small for sorrow, anger, and regret. The difference, however, is larger for frustration, and particularly large for disappointment. This provides some preliminary support to our reasoning that disappointment is more closely associated with the absence of a positive outcome than with the presence of negative outcome. In the present series of studies we look explicitly at the relation between the two types of negative outcomes and disappointment. In the first two studies participants recalled an autobiographical emotional episode and appraisals concerning type of negative outcome were assessed. In Study 3 we experimentally manipulated type of negative outcome and assessed ratings for different emotions, using a scenario methodology. In Study 4 we again manipulated type of negative outcome, but this time we assessed on-line emotional reactions by using a game-like task in which real money could be lost or won. In all studies we compare the relation between type of negative outcome and disappointment with the relation between type of negative outcome and sadness, anger, frustration, and regret.

STUDY 1

In Study 1 participants were asked to recall a specific event in which they experienced either disappointment, sadness, anger, frustration, or regret. Furthermore, they were asked to indicate to what extent the situation

² In more recent work Roseman uses the emotion term 'sadness' instead of sorrow. One reason for this was that sadness is more commonly used than sorrow in the English language (I.J. Roseman, personal communication, 22 April 1997).

³ These means were not reported by Roseman (1991). However, mean intensity ratings of disappointment on the different stories were reported. On the basis of these intensity ratings we calculated the means of disappointment ratings for the two types of negative outcomes.

TABLE 1
Mean Intensity Ratings of Different Negative Emotions as a Function of Type of Negative Outcome (adapted from Roseman, 1991)

Outcome	Emotions				
	Disappointment	Sorrow	Anger	Frustration	Regret
PA	7.16	5.42	6.33	7.19	5.57
NP	6.27	5.26	6.23	6.62	5.52

Note: PA, positive absence; NP, negative presence. In Roseman's original work is referred to PA as the absence of a reward (MS+ SS-) and to NP as the presence of a punishment (MS- SS+).

represented one of the two types of negative outcomes. We expect that events in which disappointment was experienced are more likely to be associated with the absence of a positive outcome than with the presence of a negative outcome, and that these events are associated more with the absence of a positive outcome than sadness, anger, frustration, and regret.

Method

Design and Participants. Study 1 had a five group between-subjects design (Disappointment vs. Sadness vs. Frustration vs. Anger vs. Regret).⁴ Students at the University of Amsterdam ($N = 100$) participated in this study. There were 20 participants in each condition. This study was part of a large appraisal study, that was administrated during a large-scale test session. Participants were paid 10 Dutch guilders (approximately \$5.00) for their participation.

Procedure. Questionnaires were randomly distributed among the participants. Depending on the condition they were in, participants were asked to describe a situation in which they felt either intense disappointment, sadness, frustration, anger, or regret.⁵ Next, participants were asked the following two questions: "To what extent did the situation concern something positive (something you wanted) that did *not* occur?" and "To

⁴ In the present research participants were explicitly asked about disappointment concerning an outcome. However, one can of course also be disappointed in a person. A more detailed account on the differences between these two kinds of disappointment can be found in van Dijk, van der Pligt, and Zeelenberg (1998b).

⁵ The emotion words in the present study were in Dutch, as they were in Study 2 and 4. Study 3 was conducted in English, at a university in the United Kingdom. We have no reason to believe that there are any substantial differences between Dutch and English in the denotative or connotative meaning of these words.

what extent did the situation concern something negative (something you did not want) that *did* occur?"⁶ Participants could answer both questions on a 9-point scale with end-points labelled *not at all* (1) and *to a great extent* (9), and the midpoint labelled as *neutral* (5). Furthermore, participants were asked how intense they experienced disappointment, sadness, frustration, anger, and regret in the described situation. These intensity ratings were done on a 9-point scale labelled *not at all* (1) and *very much* (9).

Results and Discussion

Appraisal scores for both main dependent variables (type of negative outcome) were entered into an ANOVA with type of negative outcome as a within-subjects factor and the emotion rated as a between-subjects factor. A significant main effect of type of negative outcome was found [$F(1,95) = 6.10$, $P < .02$], and a significant two-way interaction between type of negative outcome and the emotion rated was found [$F(4,95) = 5.56$, $P < .001$]. The mean appraisal scores for the five target emotions are shown in Table 2.⁷

Planned comparisons revealed that disappointment was more closely associated with the absence of something positive than with the presence of something negative, [$t(19) = 2.37$, $P < .05$]. Sadness and regret were both more closely associated with the presence of something negative [$t(19) = 3.46$, $P < .005$] and [$t(19) = 2.86$, $P < .01$], respectively. No differences were found for anger and frustration ($ts < 1$).

Furthermore, a contrast analysis between the appraisal ratings of disappointment and the appraisal ratings of the other emotions revealed that disappointment was more strongly associated with the absence of something positive than the other emotions [$F(4,95) = 2.61$, $P < .05$]. Disappointment was more associated with this type of negative outcome than sadness, frustration, and regret (see Table 2, comparison within upper row). Concerning the presence of a negative outcome no significant difference was found between the appraisal ratings of disappointment on the one hand and the ratings of the other emotions on the other. Although disappointment was less strongly associated with the presence of something negative than sadness. No significant differences concerning this type of

⁶ Both questions were part of a large appraisal study and were interspersed between 13 other questions about appraisals. The order of these questions was randomly determined.

⁷ The mean intensity ratings for disappointment, sadness, anger, frustration, and regret were 5.40, 6.15, 5.80, 5.30, and 5.25, respectively. The instances of sadness were slightly more intense than those of disappointment, frustration, and regret ($Ps < .05$). The range of scores, however, is small in absolute terms.

TABLE 2
Mean Appraisal Ratings on both Questions concerning Type of
Negative Outcome for Each of the Five Emotions (Study 1)

<i>Outcome</i>	<i>Emotions</i>				
	<i>Disappointment</i>	<i>Sadness</i>	<i>Anger</i>	<i>Frustration</i>	<i>Regret</i>
PA	5.75 ^d	3.50 ^a	4.80 ^{c,d}	4.15 ^{a,b,c}	3.50 ^{a,b}
NP	4.35 ^a	5.90 ^b	5.10 ^{a,b}	4.45 ^a	5.45 ^{a,b}

Note: PA, positive absence; NP, negative presence. Scores could range from 1 to 9. Higher scores reflect the following: positive is absent to a greater extent; negative is present to a greater extent. Means within a row not sharing a common superscript differ significantly ($P < .05$).

negative outcome were found between disappointment and anger, frustration, and regret (see Table 2, comparison within lower row).

Participants who recalled a situation linked with a particular emotion also rated the intensity of the other target emotions they experienced during this situation.⁸ To examine the extent to which disappointment shares a unique relation to the absence of something positive a partial correlation analysis between the appraisal questions and the intensity of the emotions was conducted. Across all described situations the intensity of disappointment was significantly correlated with the absence of a positive outcome, when corrected for the other appraisal question ($r = .18$, $P < .05$). None of the intensity ratings of sadness, anger, frustration, and regret were significantly correlated with this type of negative outcome ($r = -.07$, n.s., $r = .08$, n.s., $r = .10$, n.s., $r = .07$, n.s.), respectively.⁹ The intensity of sadness was significantly correlated with the presence of a negative outcome ($r = .32$, $P < .005$). The intensity ratings of disappointment, anger, frustration, and regret were not significantly correlated with this type of negative outcome ($r = -.06$, n.s., $r = .04$, n.s., $r = .03$, n.s., $r = .06$, n.s.), respectively.¹⁰

⁸ Disappointment situations received intensity ratings of 4.95, 4.75, 6.20, 3.60, for sadness, anger, frustration, and regret, respectively. Sadness situations received intensity ratings of 4.05, 4.55, 4.50, 2.90, for disappointment, anger, frustration, and regret, respectively. Anger situations received intensity ratings of 5.20, 3.95, 5.40, 3.60, for disappointment, sadness, frustration, and regret, respectively. Frustration situations received intensity ratings of 5.20, 4.60, 5.90, 2.90, for disappointment, sadness, anger, and regret, respectively. Regret situations received intensity ratings of 5.15, 4.95, 4.10, 4.85, for disappointment, sadness, anger, and frustration, respectively.

⁹ The zero-order correlations between the intensity of the emotions and the absence of a positive outcome were almost identical to the partial correlations. There was a significant negative correlation between the two appraisal questions ($r = -.21$, $P < .05$).

¹⁰ The zero-order correlations between the intensity of the emotions and the presence of a negative outcome were almost identical to the partial correlations.

Thus, our results support the notion that disappointment is better characterised by the absence of a positive outcome than by the presence of a negative outcome. Furthermore, results showed that disappointment can be distinguished on the basis of type of negative outcome from sadness, anger, frustration, and regret. That is, disappointment is more associated with the absence of a positive outcome than sadness, anger, frustration, and regret.

In the present study we asked participants to give ratings of the extent to which the situation involved the absence of something positive or the presence of something negative. This methodology might suffer from at least two problems, as Roseman et al. (1996) recently pointed out. First, asking for ratings characterising the content could be different from asking about the cause of an experienced emotion (see also Frijda, 1993; Parkinson & Manstead, 1992; Roseman et al., 1990). This could lead to a less correct identification of the causes of emotions. Second, emotion episodes described by participants could encompass several emotions, each with their own appraisal determinants (see also Scherer, 1993; Smith & Ellsworth, 1987). Roseman et al. (1996, p. 245) stated that "Unless the subject is instructed to specify the appraisals that are relevant to the primary emotion under investigation, appraisals relevant to other emotions may be reported, obscuring true appraisal-emotion relationships". Roseman et al. (1996) recommended correcting these problems by: (a) asking participants to rate the cause of an emotion rather than the thoughts that they had once the emotion had begun; and (b) asking participants about the *appraisals* that led to their emotions, rather than by asking them about the *event* that led to their emotion.

STUDY 2

In Study 2 we tried to replicate the findings of Study 1 using the methodology recommended by Roseman et al. (1996). As in Study 1, participants were asked to recall an intense situation in which they experienced one of the five target emotions. Participants were asked to indicate to what extent the target emotion was associated with one of the two types of negative outcomes. The question that captured the type of negative outcome was adapted from Roseman et al.¹¹

¹¹ In the Roseman et al. (1996) theory, this question is intended to capture the appraisal dimension of motivational state. We did not include a measure of situational state because a negative outcome is assumed to be appraised as motive inconsistent. This study was intended to examine whether the emotions under investigations are either inconsistent with an appetitive motive (inconsistent with attaining a reward) or inconsistent with an aversive motive (inconsistent with avoiding a punishment).

Method

Design and Participants. Study 2 had a five group between-subjects design (Disappointment vs. Sadness vs. Frustration vs. Anger vs. Regret). Students at the University of Amsterdam ($N = 110$) participated in this study. There were 22 participants in each condition. This study was part of a large appraisal study, that was administrated during a large-scale experimental session. Participants were paid 10 Dutch guilders (approximately \$5.00) for their participation.

Procedure. Questionnaires were randomly distributed among the participants. Depending on the condition they were in, participants were asked to describe a situation in which they felt either intense disappointment, sadness, frustration, anger, or regret. Participants were asked to answer the question: "My [emotion term] was caused by: wanting to get rid of or avoid something painful or wanting to get or keep something pleasurable". Participants could answer on a 9-point scale labelled *avoiding something painful* (1) to *wanting something pleasurable* (9).

Results and Discussion

Scores on the main dependent variable (type of negative outcome) were entered into an ANOVA, the single factor being emotion. Analysis revealed a significant main effect due to emotion [$F(4,105) = 4.98, P < .001$]. The mean appraisal scores of the five target emotions are shown in Table 3.¹²

A contrast analysis, in which disappointment was contrasted against the other four emotions, revealed that disappointment is more strongly associated with wanting something pleasurable than the other emotions [$t(100) = 4.03, P < .001$]. Appraisal ratings for disappointment were higher than the ratings for the other target emotions (see Table 3). This implies that disappointment was more closely associated with wanting something pleasurable than were sadness, anger, frustration, and regret. Moreover, only disappointment appraisal ratings differed significantly from the neutral midpoint of the scale, implying that disappointment was associated more strongly with one type of negative outcome, that is, the absence of a positive outcome [$t(21) = 5.40, P < .001$]. Sadness, anger,

¹² The mean intensity ratings for disappointment, sadness, anger, frustration, and regret were 6.81, 7.73, 7.64, 7.50, 6.48, respectively. The only significant differences were those between sadness and regret, and anger and regret (P s < .05). Note, however, that despite its statistical significance, the difference between the least intense and the most intense emotion is small in absolute terms.

TABLE 3
Mean Appraisal Ratings for Each of the Five Emotions (Study 2)

<i>Appraisal</i>	<i>Emotions</i>				
	<i>Disappointment</i>	<i>Sadness</i>	<i>Anger</i>	<i>Frustration</i>	<i>Regret</i>
Avoiding painful vs. Wanting pleasurable	7.45 ^c	5.41 ^{a,b}	4.27 ^a	5.73 ^b	5.95 ^b

Note: Scores could range from (1) *avoiding something painful* to (9) *wanting something pleasurable*. Means within a row not sharing a common superscript differ significantly ($P < .05$).

frustration, and regret were not differentially associated with one type of negative outcome ($ts < 2.04$, n.s.).

Thus, the results of this study support our predictions and replicate the findings of Study 1. Disappointment appears to be more caused by the absence of a positive outcome than by the presence of a negative outcome. Moreover, results showed that disappointment can be distinguished from the related emotions of sadness, anger, frustration, and regret on the basis of type of negative outcome. In Study 3 we attempt to extend these findings using a different approach.

STUDY 3

In the two previous studies participants were asked to recall an instance of a target emotion and to rate the extent to which this emotion was caused by a specific type of negative outcome. In the present study we used a scenario method, in which we manipulated type of negative outcome and asked for intensity ratings of the target emotions. Participants were confronted with either the absence of a positive outcome or the presence of a negative outcome. We expect that disappointment ratings are higher in the former situation than in the latter situation. Furthermore, we expect that in the former situation disappointment ratings are higher than are sadness, anger, frustration, and regret ratings.

Method

Design and Participants. Study 3 had a two-group between-subjects design (Positive-Absence vs. Negative-Presence). Students at the University of Sussex, UK ($N = 40$) participated in this study on a voluntary basis. There were 20 participants per condition.

Procedure. Questionnaires were randomly distributed among the participants. Participants in the Positive-Absence condition (PA) read the following story:

It is the time of year when you have to fill in your tax form. You have sorted out all your financial ins and outs. You have filled in your tax form to the best of your abilities. You have done this before, so it is not too big a hassle. After re-examining your tax form and signing it, you expect that you get a tax rebate of £150. After a while you receive a letter from the tax office. Due to a new tax rule, some of your calculations were not valid and so you will not receive the expected rebate of £150. You do not have to pay any extra taxes. How would you feel about this outcome?

Participants in the Negative-Presence condition (NP) read the following story:

It is the time of year when you have to fill in your tax form. You have sorted out all your financial ins and outs. You have filled in your tax form to the best of your abilities. You have done this before, so it is not too big a hassle. After re-examining your tax form and signing it, you expect that you won't have to pay any extra tax, but you also expect that you won't get any tax rebate. After a while you receive a letter from the tax office. Due to a new tax rule, some of your calculations were not valid and now you have to pay £150 in extra taxes. How would you feel about this outcome?

After reading the story participants were first asked to indicate how negative their feelings would be in general after the outcome. This rating was done on a 9-point scale with end-points labelled *not at all negative* (1) to *very negative* (9). This question was asked in order to give participants an opportunity to give a general evaluation of the situation. Next, participants were asked to give intensity ratings of more specific emotions, (i.e. disappointment, regret, frustration, sadness, and anger). These questions had the following wording: "How much [emotion term] would you experience after this outcome?" Ratings of the specific emotions were all made on 9-point scales with endpoints labelled *none* (1) to *a lot* (9).

Results and Discussion

First, we examined negative feelings in general that would be experienced. The results showed that negative feelings were more intense in the NP condition ($M = 7.05$) than in the PA condition [$M = 6.10$], $t(38) = 2.71$, $P < .01$]. The mean intensity ratings for the five target emotions are reported in Table 4. Intensity ratings of these emotions were entered into an ANOVA, using condition as a between-subjects factor and

emotion as a within-subjects factor. Analyses revealed a marginally significant main effect of condition [$F(1,38) = 3.52$, $P < .07$], and a significant two-way interaction between condition and emotion [$F(4,35) = 5.58$, $P < .001$].

Univariate tests revealed that disappointment was more intense in the PA condition than in the NP condition [$F(1,38) = 4.40$, $P < .05$], whereas, anger and frustration were more intense in the NP condition than in the PA condition ($F_s > 7.00$, $P_s < .05$). No differences between conditions were found for sadness and regret ($F_s < 2.14$, n.s.).

We also predicted that disappointment would be the dominant emotion in the PA condition. Planned comparisons confirmed this prediction and revealed that disappointment is more intense in the PA condition than the other target emotions (all $P_s < .005$). Although disappointment was more intense in the NP condition than were sadness and regret ($P_s < .005$), disappointment was the only emotion that was more intense in the PA condition than in the NP condition.

Thus, the results of Study 3 support our predictions and replicate and extend the findings of Studies 1 and 2. Disappointment is more intense after experiencing the absence of a positive outcome than after experiencing the presence of a negative outcome. Moreover, disappointment is more intense than sadness, anger, frustration, and regret after experiencing the absence of a positive outcome. However, it should be noted that this study was a simulation (i.e. participants were inferring what they would feel if they were in these situations), and there is no 100% guarantee that their inferences were fully accurate. To overcome this problem we designed an additional experiment in which on-line emotional reactions toward the two types of negative outcomes were assessed.

TABLE 4
Mean Intensity Ratings per Condition for Each of the Five Emotions
(Study 3)

Outcome	Emotions				
	Disappointment	Sadness	Anger	Frustration	Regret
PA	7.25 ^{c(a)}	3.15 ^{a(a)}	4.95 ^{b(a)}	5.25 ^{b(a)}	3.10 ^{a(a)}
NP	6.30 ^{b(b)}	4.10 ^{a(a)}	6.60 ^{b(b)}	7.00 ^{b(b)}	3.85 ^{a(a)}

Note: PA, positive absence; NP, negative presence. A higher score indicates a higher intensity of the emotion. Means within the same row not sharing a common first superscript differ significantly ($P < .005$). Means within the same column not sharing a common second (between parentheses) superscript differ significantly ($P < .005$).

STUDY 4

In the first two studies we used a retrospective method, in which participants recalled actual events in which they experienced particular emotions and measures concerning type of negative outcome were obtained. In Study 3 we used a scenario method, in which we manipulated type of negative outcome and asked for intensity ratings of the target emotions. In the present study we focus on *on-line emotional reactions*. Participants in this experimental study were confronted with either the absence of a (real) positive outcome or the presence of a (real) negative outcome. This was done by using a framing procedure in which an identical outcome was presented either in win-terms or in loss-terms. This is both a common and effective procedure used in the field of behavioural decision making (see e.g. Kahneman & Tversky, 1982). We expect to replicate our previous finding, that is, we expect that disappointment ratings are higher in the former situation than in the latter. Furthermore, we expect that in the former situation disappointment ratings are higher than are sadness, anger, frustration, and regret ratings.

Method

Design and Participants. Study 4 had a two-group between-subjects design (Positive-Absence vs. Negative-Presence). Students at Nijmegen University ($N = 40$) participated in this study. There were 20 participants in each condition.¹³ This study was administrated during a large experimental session. Participants were paid 10 Dutch guilders (approximately \$5.00) for their participation in the large experimental session, and, as part of the present study, could gain an additional 5 Dutch guilders.

Procedure. All participants were promised 10 Dutch guilders for their participation. However, participants in the Negative-Presence condition were endowed with 5 Dutch guilders extra. They were given 15 Guilders at the start of the experiment and were told that they would play a game at the end of the session in which they could win or lose 5 Dutch guilders or they could win or lose no money. At the end of the session questionnaires were randomly distributed among the participants. Participants in the Negative-Presence condition read the following instruction (The Positive-Absence condition is shown in brackets):

¹³ In order to obtain 20 participants in the two relevant conditions the game was played with 84 participants. Only the data of those participants who lost the game were included in this study.

We are about to play a game in which money can be lost [won]. This research is concerned with your choices and you can lose [win] real money. It is therefore different from most other research that is concerned with hypothetical choices and consequences. [The money you can win is independent from the 10 Dutch guilders that you receive for your participation in the whole session, this money you get anyway.] How does the game work? In a moment you may throw a die and if you throw a losing [winning] number you lose [win] 5 Dutch guilders. If you throw one of the other numbers you lose [win] nothing. You may throw the die yourself and also choose three numbers with which you lose [win] money and three numbers with which you lose [win] nothing.

After participants read the instruction and filled in the three winning or losing numbers the experimenter came along with a die and the game was played. Participants were paid immediately according to the result of their throw. For participants in the Positive-Absence condition this meant that they *did not win* the extra 5 guilders, and for those in the Negative-Presence condition it meant that they *lost* 5 guilders. (Because participants in the Negative-Presence condition had received 15 guilders at the beginning of the larger experimental session, all participants left with 10 guilders more than when they entered the experiment.) Next, participants were first asked to indicate how negative their feelings are in general after the outcome. This rating was done on a 9-point scale with end-points labelled *not at all* (1) to *very much* (9). This question was asked in order to give participants an opportunity to give a general affective evaluation of the situation. Next, participants were asked to give intensity ratings of more specific emotions, namely, disappointment, regret, frustration, sadness, and anger. These questions had the following wording: "How much [emotion term] are you experiencing after this outcome?" Ratings of the specific emotions were all made on 9-point scales with endpoints labelled *none* (1) to *very much* (9).

Results and Discussion

First, we examined negative feelings in general that were experienced. Results showed that negative feelings in general were not more intense in the NP condition ($M = 4.00$) than in the PA condition [$(M = 3.7)$, $t(38) < 1$, n.s.]. The mean intensity ratings for the five target emotions are reported in Table 5. Intensity ratings of these emotions were entered into an ANOVA, using condition as a between-subjects factor and emotion as a within-subjects factor. Analyses revealed only a significant two-way interaction between condition and emotion [$F(4,35) = 3.15$, $P < .05$].

Univariate tests revealed that, as predicted, disappointment was more intense in the PA condition than in the NP condition [$F(1,38) = 6.05$,

TABLE 5
Mean Intensity Ratings per Condition for Each of the Five Emotions
(Study 4)

<i>Outcome</i>	<i>Emotions</i>				
	<i>Disappointment</i>	<i>Sadness</i>	<i>Anger</i>	<i>Frustration</i>	<i>Regret</i>
PA	4.75 ^{a(a)}	1.35 ^{d(a)}	1.40 ^{d(a)}	2.25 ^{c(a)}	3.10 ^{b(a)}
NP	3.40 ^{a(b)}	1.70 ^{c(a)}	1.65 ^{c(a)}	2.60 ^{a,b(a)}	1.95 ^{b,c(a)}

Note: PA, positive absence; NP, negative presence. A higher score indicates a higher intensity of the emotion. Means within the same row not sharing a common first superscript differ significantly ($P < .005$). Means within the same column not sharing a common second (between parentheses) superscript differ significantly ($P < .05$).

$P < .05$]. Concerning the other emotions no significant differences between the two conditions were found ($F_s < 3.60$, n.s.).

We also predicted that disappointment is the dominant emotion in the PA condition. Planned comparisons confirmed this prediction and revealed that disappointment was more intense in the PA condition than were the other target emotions ($P_s < .005$). Although disappointment was more intense in the NP condition than were sadness, anger and regret ($P_s < .05$), disappointment was the only emotion that was more intense in the PA condition than in the NP condition. A possible reason why disappointment ratings were also relatively high in the NP condition could be that some participants in this condition did not unequivocally perceive the situation (i.e. losing money) as the presence of a negative outcome. These participants may have been partly responding to the absence of a positive outcome, that is, not having money.¹⁴ This issue may be resolved by including in future research questions concerning how participants appraise the situation with which they are confronted.

Thus, the results of Study 4 support our predictions and replicate and extend the findings of Studies 1, 2, and 3. Disappointment was more intense after experiencing the absence of a positive outcome than after experiencing the presence of a negative outcome. Moreover, disappointment was more intense than sadness, anger, frustration, and regret after experiencing the absence of a positive outcome.

¹⁴ This could also account for the relative high disappointment ratings in the NP condition of Study 3.

GENERAL DISCUSSION

In the present paper we distinguished between two types of negative outcomes, the absence of a positive outcome and the presence of a negative outcome. It is argued that disappointment, because of its close link with hope, desire, and promise, is more caused by the former type of outcome than the latter. Moreover, disappointment can be distinguished on the basis of type of negative outcome from related emotions, such as sadness, anger, frustration, and regret. Disappointment is caused more by the absence of a positive outcome than these other emotions. Results of four studies using different methodologies provide convergent support for these predictions.

These results also support the explicit distinction between being displeased about the disconfirmation of the prospect of a desirable event (i.e. disappointment) and being displeased about the confirmation of the prospect of a undesirable event (i.e. fears-confirmed) made by Ortony et al. (1988).

The definitions of disappointment described earlier in this paper suggest that disappointment is primarily experienced in a situation in which something positive was expected but did not occur. This seems closely linked with hope, desire, and promise. It should be noted, however, that, although expectations, hope, desire, and promise are related, they are not synonymous. For example, one may hope for something without expecting it to happen. In our view disappointment is the result of expectations that were unfulfilled, and were initially desired or hoped for. As Shand (1914, p. 487) stated "Disappointment . . . implies that we have hitherto been hopeful of the issue, if not confident".

Although disappointment was the main emotion under investigation, we also investigated the relation between sadness, anger, frustration, and regret and type of negative outcome. This enabled us to compare our results concerning this relation with the predictions of several emotion researchers. According to many theorists, sadness is more often associated with the absence of a positive outcome, whereas anger, frustration, and regret are more often associated with both types of negative outcomes (Frijda, 1986; Higgins, 1989; Roseman, 1984; Roseman et al., 1990, 1996). In our studies we found that anger, frustration, and regret are associated with both types of negative outcomes. Concerning sadness we did not find evidence that this emotion is strongly associated with the absence of something positive. A possible explanation for the lack of a strong relation between sadness and the absence of a positive outcome could be a process of psychological "repackaging".¹⁵ People can transform an appraisal of the absence of positive outcome into an appraisal of the

¹⁵ We thank an anonymous reviewer for bringing this possibility to our attention.

presence of a negative outcome. For example, one could feel sad because of the death of a loved one. Depending on one's focus, this experience could be appraised as the absence of something positive (e.g. when the focus is on the absence of a loved one) or as the presence of a negative outcome (e.g. when the focus is on the presence of death). The focus on either the absence of a positive outcome or the presence of a negative outcome may change in time. The result of these different focuses could help to explain why sadness, in our studies, was not associated with one type of negative outcome. Perhaps further refinements in the measurement of appraisals could help to clarify this issue. The results of the present studies, however, imply that disappointment is less affected by the process of psychological "repackaging". In our four studies disappointment was clearly associated with one type of negative outcome, that is, the absence of a positive outcome.

Until recently very little emotion research has focused on disappointment. However, in the field of decision making disappointment is considered to be an important emotion. Decision researchers (e.g. Bell, 1985; Loomes & Sugden, 1986) have stressed the notion that decision makers anticipate disappointment and take it into account when making decisions. If people do anticipate disappointment, research on disappointment could be helpful in understanding how this emotion affects decision processes. For instance, the fact that disappointment is primarily associated with the absence of positive outcomes, together with people's tendency to avoid disappointment, could help to explain why people tend to be cautious in their decision making when dealing with positive outcomes. Kahneman and Tversky (1982), for instance, showed that people are generally risk-averse and that this tendency is stronger in the domain of gains (where type of negative outcome is the absence of something positive) than in the domain of losses. One reason for this tendency could be that taking risks in the domain of gains is associated with more anticipated disappointment. This increased anticipation of disappointment could make people more risk-averse. When people are risk-averse they are likely to get what they expect and therefore do not run the risk of becoming disappointed.

However, disappointment is not only an unpleasant emotion that is anticipated or avoided. The experience of disappointment could also have a bright side. Shand (1914, p. 489) stressed the useful function of disappointment in desire: "Disappointment, in its after-effect on desire, always tends to counteract the excesses of hope, to evoke anxious questionings, to suppress all confidence that is not well-founded; so far as it is checked and balanced by hope itself". Or as Stanley (cited in Shand, 1914, p. 488) stated, "Disappointment turns life from false dreams to stern realities: It prompts an investigation of causes and arouses cognition to a

full understanding of the situation. Hope thereby, becomes more rational and realisable”.

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REFERENCES

- Arnold, M.B. (1960). *Emotion and personality*. New York: Columbia.
- Bell, D.E. (1982). Regret in decision making under uncertainty. *Operations Research*, 30, 961–981.
- Bell, D.E. (1985). Disappointment in decision making under uncertainty. *Operations Research*, 33, 1–27.
- Frijda, N.H. (1986). *The emotions*, Cambridge, UK: Cambridge University Press.
- Frijda, N.H. (1993). The place of appraisal in emotion. *Cognition and Emotion*, 7, 357–387.
- Higgins, E.T. (1989). Self-discrepancy theory: what patterns of self-belief cause people to suffer? *Advances in Experimental Social Psychology*, 22, 93–136.
- Inman, J.J., Dyer, J.S., & Jia, J. (1997). A generalized utility model of disappointment and regret effects on post-choice valuation. *Marketing Science*, 16, 97–111.
- Kahneman, D., & Tversky, A. (1982). The psychology of preferences. *Scientific American*, 246, 136–142.
- Levine, L.J. (1996). The anatomy of disappointment: A naturalistic test of appraisal models of sadness, anger, and hope. *Cognition and Emotion*, 10, 337–359.
- Loomes, G., & Sugden, R. (1982) Regret Theory: An alternative theory of rational choice under uncertainty. *Economic Journal*, 92, 805–824.
- Loomes, G., & Sugden, R. (1984). The importance of what might have been. In O. Hagen and F. Wenstrop (Eds.), *Progress in utility and risk theory* (pp. 219–235). Dordrecht: D. Reidel.
- Loomes, G., & Sugden, R. (1986). Disappointment and dynamic inconsistency in choice under uncertainty. *Review of Economic Studies*, 53, 271–282.
- Mowrer, O.H. (1960). *Learning theory and behavior*. New York: Wiley.
- Ortony, A., Clore, G.L., & Collins, A. (1988). *The cognitive structure of emotions*. New York: Cambridge University Press.
- Parkinson, B., & Manstead, A.S.R. (1992). Appraisal as a cause of emotion. In M.S. Clark (Ed.), *Review of personality and social psychology* (Vol. 13, pp. 122–149). Newbury Park, CA: Sage.
- Roseman, I.J. (1984). Cognitive determinants of emotions: A structural theory. In P. Shaver (Ed.), *Review of personality and social psychology* (Vol. 5, pp. 11–36). Beverly Hills, CA: Sage.
- Roseman, I.J. (1991). Appraisal determinants of discrete emotions. *Cognition and Emotion*, 5, 161–200.
- Roseman, I.J., Antoniou, A.A., & Jose, P.E. (1996). Appraisal determinants of emotions: Constructing a more accurate and comprehensive theory. *Cognition and Emotion*, 10, 241–277.
- Roseman, I.J., Spindel, M.S., & Jose, P.E. (1990). Appraisal of emotion-eliciting events: Testing a theory of discrete emotions. *Journal of Personality and Social Psychology*, 59, 899–915.
- Scherer, K.R. (1984). Emotion as a multi-component process. In P. Shaver (Ed.), *Review of personality and social psychology: Vol. 5. Emotions, relationships, and health* (pp. 37–63). Newbury Park, CA: Sage.

- Scherer, K.R. (1993). Studying the emotion-antecedent appraisal process: An expert system approach. *Cognition and Emotion*, 7, 325-355.
- Shand, A.F. (1914). *The foundations of character*. London: Macmillan.
- Shepperd, J.A., Ouellette, J.A., & Fernandez, J.K. (1996). Abandoning unrealistic optimism: Performance estimates and the temporal proximity of self-relevant feedback. *Journal of Personality and Social Psychology*, 70, 844-855.
- Smith, C.A., & Ellsworth, P.C. (1985). Patterns of cognitive appraisal in emotion. *Journal of Personality and Social Psychology*, 48, 813-838.
- Smith, C.A. & Ellsworth, P.C. (1987). Patterns of appraisal and emotion related to taking an exam. *Journal of Personality and Social Psychology*, 52, 475-488.
- van Dijk, W.W., & van der Pligt, J. (1997). The impact of probability and magnitude of outcome on disappointment and elation. *Organizational Behavior and Human Decision Processes*, 69, 277-284.
- van Dijk, W.W., van der Pligt, J., & Zeelenberg, M. (1998a). *Effort invested in vain: The impact of effort on the intensity of disappointment and regret*. Manuscript submitted for publication.
- van Dijk, W.W., van der Pligt, J., & Zeelenberg, M. (1998b). *Investigating the appraisal patterns of outcome-related and person-related disappointment*. Manuscript submitted for publication.
- Webster's Third New International Dictionary* (3rd ed.). (1981). Springfield, MA: Merriam-Webster.
- Weiner, B., Russel, D., & Lerman, D. (1979). The cognition-emotion process in achievement-related contexts. *Journal of Personality and Social Psychology*, 37, 1211-1220.
- Zeelenberg, M., & Beattie, J. (1997). Consequences of regret aversion: 2. Additional evidence for effects of feedback on decision making. *Organizational Behavior and Human Decision Processes*, 72, 63-78.
- Zeelenberg, M., Beattie, J., van der Pligt, J., & de Vries, N.K. (1996). Consequences of regret aversion: Effects of expected feedback on risky decision making. *Organizational Behavior and Human Decision Processes*, 65, 148-158.
- Zeelenberg, M., van Dijk, W.W., Manstead, A.S.R., & van der Pligt, J. (1998a). The experience of regret and disappointment. *Cognition and Emotion*, 12, 221-230.
- Zeelenberg, M., van Dijk, W.W., van der Pligt, J., Manstead, A.S.R., van Empelen, P., & Reinderman, D. (1998b). Emotional reactions to the outcomes of decisions: The role of counterfactual thought in the experience of regret and disappointment. *Organizational Behavior and Human Decision Processes*, 75, 117-141.

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